

Press Release: For Immediate Release

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Heading: WRC advances to monitoring wastewater for COVID-19 infections in communities as they partner with NICD in the second phase of the COVID-19 Wastewater Surveillance Programme

On the 20th of May 2020, the Water Research Commission (WRC) and the South African Local Government Association (SALGA), launched a special programme on the surveillance of SARS COV – 2 in wastewater and sanitation systems in South Africa. The purpose of the initiative was to establish the monitoring of Covid 19 infections in communities using a water and wastewater quality-based approaches.

The first phase of the three-phase programme approach of proof of concept was successfully completed in September 2020. The objectives undertaken in this first phase were to establish the scientific sampling and testing methodologies to determine the presence, persistence and infectivity of SARS-CoV-2 RNA fragments in wastewater influents especially around water environments in non-sewered informal settlements.

Wastewater influents of 10 wastewater treatment works in 5 provinces hotspots areas were targeted namely, Gauteng, Kwa Zulu Natal, Eastern Cape, Western Cape, and Free State. This was done over a period of 4 weeks. The study also extended to samples from industrial site sewage treatment plants (Eskom power stations and mines) as well as surface water samples from 3 rivers, namely Jukskei River downstream of Alexandra, the Hennops River downstream of Tembisa, the Blougaatspruit in the Cradle of Humankind and surface run-off from an informal settlement in Alexandra .

Three virus recovery methods were used in the testing and all three were effective in the recovery and identification of the SARS-CoV-2 RNA fragments. The RNA was detected in surface river water samples and 98% of wastewater samples were positive for the presence. This has demonstrated that SARS COV-2 RNA can be found in wastewater and water environments, and this can inform us of the presence of Covid19 infections as well where the hotspots are.

This progress was noted with enthusiasm by Dr Nonhlanhla Kalebaila, WRC research manager and programme lead, “We are very excited that the results of our tested methodologies have given us enough confidence to move onto the second phase” she expressed.

The WRC has commenced the second phase of the programme in partnership with NICD and SALGA. The water sector as well as members of the public will be briefed through a

webinar scheduled for the 3rd of November 2020. This second phase will focus on monitoring of provincial hotspots using the successful sampling protocols in specific cities. The monitoring of these hotspots will provide with the opportunity for near real time outbreak data as an early warning for second waves of infections. NICD will use their extensive laboratory network to monitor SARS-CoV-2 and other waterborne viruses.

Dr Melinda Suchard from the NICD exclaimed, “ We are very excited to embark on the expansion of the surveillance of SARS-CoV-2 in South Africa and looking forward to the collaboration with the WRC, the labs and municipal partnerships” .

This is a definitive milestone for water research and South Africa at large, the success of which is not possible without the support of key strategic partners that have played a pivotal role in its implementation. The WRC will continue to work closely with its strategic partners and stakeholders such as the Department of Human Settlements, Water and Sanitation (DHSWS), South African Local Government Association (SALGA), South African Medical Research Council (SAMRC) and the NCID.

Mr Jay Bhagwan commented, “this is positioning the country to rapidly transition to a national surveillance programme and complements Government initiatives of clinical testing by establishing an early warning system.”

For more information visit:

<http://www.wrc.org.za/covid-surveillance-programme>

End.

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